

REMARKS

Claims 1-9, 11-15, 17-23, 25-32, 42-44 and 52-69 are pending in this application. Claim 62 has been rejected under 35 U.S.C. §102. Claims 1-9, 11-15, 17-23, 25-32, 42-44 and 52-69 have been rejected under 35 U.S.C. §103. Claim 62 has been amended. Claim 69 has been cancelled without prejudice. No new matter has been added. Reconsideration is respectfully requested.

Rejection Under 35 U.S.C. §102

The Examiner has rejected Claim 62 under 35 U.S.C. §102(b) as being anticipated by Dieulesaint, U.S. Patent #3,706,055. (Although the Examiner has listed the Grudkowski reference in the opening portion of the rejection, the Examiner's comments are directed to Dieulesaint.) This rejection is respectfully traversed in view of amended Claim 62. No new matter has been added by the amendment of Claim 62.

Claim 62, as amended, now includes the feature that a selected frequency is read from the transducer. This feature is not disclosed or suggested in Dieulesaint. Dieulesaint is directed toward continuously adjustable delay lines in a piezoelectric wave guide. In Dieulesaint, a delay in a semiconductor is created by illuminating a region of the semiconductor with a light source, thus rendering the semiconductor locally conductive and affecting the delay characteristics of the device. Dieulesaint is not directed toward, nor does it disclose or suggest, reading a selected frequency or any other frequency from a transducer. In contrast, Applicant uses two light sources to illuminate a medium and reads a selected frequency from a transducer. Thus, Dieulesaint cannot anticipate Applicant's Claim 62 as amended.

Rejection Under 35 U.S.C. §103

The Examiner has rejected Claims 1-9, 11-15, 17-23, 25-32, 42-44 and 52-69 under 35 U.S.C. §103(a) as being unpatentable over Grudkowski, U.S. Patent #5,243,307, in view of Dieulesaint. These rejections are respectfully traversed.

As stated previously, the rejected claims recite, *inter alia*, reading a selected frequency from a transducer. These features are not disclosed or suggested in Grudkowski or Dieulesaint.

Grudkowski is directed toward an acoustic charge transport device that varies the phase of a signal by controlling the velocity of a surface acoustic wave (SAW), thus allowing the relative phase between two signals to be maintained. The SAW velocity is controlled by illuminating the SAW substrate. In contrast, Applicant illuminates a medium during acoustic wave propagation and reads a selected frequency from the medium. There is no disclosure or suggestion in Grudkowski of reading a selected frequency from a medium as recited by Applicant.

As stated previously, Dieulesaint is directed toward continuously adjustable delay lines in a piezoelectric wave guide and does not disclose or suggest reading a selected frequency from a medium as recited by Applicant.

The Examiner has opined that reading a selected frequency component of the acoustic wave is intended use. Applicant respectfully disagrees. Reading a selected frequency component of an acoustic wave is a step of the method being claimed, not a statement of how a product or apparatus is used. None of the references cited by the Examiner disclose or suggest a method involving this step.

Applicant respectfully notes that in *Ex Parte Masham*, 2 USPQ2d, 1647 (1987), cited by the Examiner, the Board was reviewing an *apparatus* claim. The claimed apparatus in Masham was for mixing flowing developer material. Only one claim remained in the application at the time of appeal; there were no other claims at issue and, in particular, there were no method claims in the application at the time of appeal. Applicant respectfully brings to the Examiner's attention that Claims 1-9, 11-15, 26-32, 42-44 52-61 of the present application are all *method* claims. In *Masham*, there were no method claims at issue. Rather, at issue was whether a recitation with respect to the material intended to be worked upon by the claimed *apparatus* imposed any structural limitations upon the claimed apparatus which differentiated it from a prior art. *Masham* is, thus, inapplicable to the method claims of the present invention reciting the step of reading a selected frequency component of an acoustic wave.

Comment Regarding Official Notice

The Examiner has taken official notice of the equivalence of the light emitting diode and the laser diode for their use in the surface acoustic wave art. Applicant respectfully traverses the Examiner's taking of official notice.

The output of a laser diode is a directed, collimated beam of light. The output of an LED is light that is typically uniformly distributed in all directions from the surface of the substrate. LED outputs receive direction from the plastic bulb housing the substrate. There is no parallel, concentrated beam of light energy in an LED as there is in a laser diode. Moreover, given the differing nature of the two devices, the drive electronics needed for each device differs greatly. Laser diodes require drive electronics with much greater stability than LEDs. Accordingly, LEDs and laser diodes are not obvious functional equivalents, as the Examiner has stated.

The Examiner has also taken official notice of the equivalence of the controller and the light modulator. Applicant respectfully traverses the Examiner's taking of official notice.

A controller and a modulator have fundamental operational differences. Whereas a controller may be any apparatus that performs some level of control to the device it is controlling, including, without limitation, simply providing an appropriate DC voltage level for a device, a *modulator* implies a variation. For example, a definition of modulate found at the Merriam-Webster web site at www.m-w.com is: to vary the amplitude, frequency, or phase of (a carrier wave or a light wave) for the transmission of intelligence (as by radio); *also* : to vary the velocity of electrons in an electron beam. In contrast, the same web site gives the following definition for control: to exercise restraining or directing influence over. Thus, in a controller, there is no implication that a variation will take place, as there is with a modulator. Accordingly, controllers and light modulators are not equivalents, as the Examiner has stated.

Comment Regarding Finality of Office Action

The Examiner has made the present Office Action a final. Applicant respectfully traverses the finality of the present Office Action.

The Examiner has stated that Applicant's amendment necessitated the new grounds of rejection in the current Office Action. However, the new art cited by the Examiner (the Dieulesaint reference) was not applied to address any change to the claims of record. Thus, Applicant's amendment did not necessitate new grounds of rejection and respectfully submits, therefore, that the finality of the current Office Action is improper. Applicant respectfully notes that the current amendment to Claim 62 brings it into conformance with the other claims currently of record.

In view of the foregoing, favorable reconsideration of the application is respectfully requested. It is submitted that the claims of record are in condition for allowance.

The Commissioner is authorized to charge any additional fees which may be required or credit overpayment to Deposit Account No. 50-0872 and, in particular, if this response is not timely filed, then the Commissioner is authorized to treat this response as including a petition to extend the time period pursuant to 37 C.F.R. 1.136 (A) requesting an extension of time of the number of months necessary to make this response timely filed. The petition fee due in connection therewith may be charged to deposit account No. 50-0872.

Respectfully submitted,

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: John Hong et al.

Title: METHOD AND APPARATUS FOR
MODIFYING ACOUSTIC WAVE
CHARACTERISTICS

Appl. No.: 09/672,682

Filing Date: 9/28/00

Examiner: Karen B. Addison

Art Unit: 2834

MARK UP OF AMENDMENT AND REQUEST FOR RECONSIDERATION UNDER 37 C.F.R. § 1.116

Commissioner for Patents
Box NON-FEE AMENDMENT
Washington, D.C. 20231

Sir:

This communication is responsive to the Office Action dated April 1, 2002 concerning the above-referenced patent application.

Please amend the application as follows:

In the Claims:

62. (Once Amended) An apparatus for varying the characteristics of an acoustic wave, comprising:

- a medium for acoustic wave propagation;
- a transducer formed on the medium for generating an acoustic wave;
- a first light source illuminating a first portion of the medium during a propagation of the acoustic wave; and
- a second light source illuminating a second portion of the medium during a propagation of the acoustic wave;

wherein a selected frequency component of the acoustic wave is read from the
transducer.